REVIEWS.

ART. XII.—*The Principles and Practice of Obstetrics; Illustrated with One Hundred and Fifty-Nine Lithographic Figures from Original Photographs, and with Numerous Woodcuts.* By HUGH L. HODGE, M. D., etc. etc. etc. Philadelphia: Blanchard & Lea, 1864. 4to. pp. 550.

WHEN the intention of the distinguished Professor of Midwifery in the University of Pennsylvania to prepare for publication a work on Obstetrics was first announced, several years ago, from our knowledge of his entire competency for the task, our anticipations as to the faithfulness and ability with which it would be accomplished were in the highest degree favourable, and now, when at length the work has appeared, we are pleased to find that our anticipations in respect to it are in all respects fully realized.

Considering the many able and voluminous treatises on the principles and practice of obstetrics we already possess, and by which the entire subject would seem to have been brought down very completely to the present day, and all that we know in respect to it fully and clearly set forth, it might be supposed that there would scarcely be need or room for another. Neither would there be, if it were simply a question of another work on midwifery compiled from those which had preceded it; reiterating, in somewhat different form and language, the same doctrines, the same practical directions as those we already possess. The work of Dr. Hodge is not, however, a mere echo of the ideas and instructions of others; it is to a very great extent an original work. The author has not been content with simply inculcating the opinions and practice of others, however high their standing and authority in the profession, but he has invariably subjected every opinion and practice, from whatever source it emanates, to the test of careful and repeated clinical observation, with a view to detect those, if any, which are false, and further to confirm all of them that are true. His endeavour evidently has been "to ascertain every minute circumstance relating to parturition, to determine, as precisely as possible, the modes of delivery in all normal cases of labour, and to discover what efforts nature makes in abnormal or even impracticable cases, and hence to establish fundamental principles for the guidance of the obstetrician. He has ventured, therefore, to give, without reserve, his own opinions upon all points, and thus he will often be found in opposition to the best and most admired obstetric authorities."

The work of Dr. Hodge is in the highest degree creditable to its author, and confers no trifling honour upon the school whose chair of obstetrics he so long and so ably filled. It cannot fail to become, at least with American practitioners, a standard authority: the author being as much distinguished for his intimate acquaintance with his subject, in all its details; his long experience and admirable skill in the practice of obstetrics; his entire accuracy and perfect faithfulness in the report of his experience—in its bearing, especially, upon every unsettled question, whether relating to the science or to the art of midwifery. In his practical directions, while Dr. Hodge

evinces great caution, it is a caution which is widely removed from timidity, which, by hesitating to act promptly in cases where interference is required, prolongs the suffering and jeopards the life of both mother and infant. Having great faith in the ability of the natural powers to effect with safety the birth of the child in the great majority of cases of labour, he nevertheless insists upon the necessity of prompt interference on the part of the accoucheur, with the view of facilitating or accomplishing delivery, by such means as are adapted to the particular circumstances of the case, whenever there shall arise a reasonable doubt as to the possibility of the labour being terminated with safety to the mother and child by the unaided powers of nature.

The present treatise is divided into twenty-seven chapters. The first three are devoted to the anatomy of the pelvis and organs of generation in the female, with the measurements, planes, and axes of the female pelvis, and of the fœtal head, in relation to their obstetric bearings. The next two chapters treat of gestation and the symptoms of pregnancy; the next chapter of the management of pregnant women; the next of labour. The ensuing four chapters treat of natural labour, its mechanism, presentations, and management, with the treatment of mother and child after delivery. The subject of the next five chapters is obstetric operations; that of the ensuing ten chapters is dystochia—difficult labour; first, from complications on the part of the fœtus—large head, malpresentations, deformities; second, from complications on the part of the mother—deformed pelvis, malposition of uterus, rigidities and irregular contractions, preternatural adhesion of placenta, puerperal convulsions, rupture of uterus, laceration of bladder, abortion and premature labour, uterine hemorrhage, inertia, and inversion of uterus, exhaustion, local and general disease. The subject of the closing chapter is extra-uterine pregnancy.

In the early portion of the treatise the subject of the natural process of labour is treated with great fulness: much attention being devoted especially to the elucidation of the modus operandi of those powers by which the fœtus is expelled, and of the varied physical and vital resistances offered to the descent and delivery of the child, in all the presentations and positions which it can possibly assume. This comprehends what is now known as the mechanism of labour. "It is the knowledge of this mechanism, in all its minute details, which can alone furnish correct principles for the guidance of the accoucheur." Hence, the mechanism of labour will be found to occupy considerable space in the present treatise, not merely in reference to presentations of the vertex, to which attention has, for the most part, been, heretofore, too exclusively confined, but in reference to all the varieties of presentations and positions to which the fœtus is liable. We believe these minute details to be of the utmost importance. An accurate acquaintance with every point connected with the delivery of the fœtus is absolutely necessary to the safe conduct of all cases of labour, but more especially of such as are tedious and difficult.

Dr. Hodge has not been satisfied with simply describing the mechanism of labour, or the proper application of the several obstetric instruments, but by a series of original illustrations has endeavoured to render the whole subject as clear as possible. "He has, in a great measure, abandoned the usual plan of representing the whole child, in relation to the mother's organs, which must necessarily be more or less inaccurate. On the contrary, he has adopted the plan, prevalent in the lecture-room, of exhibiting the fœtal cranium in its various relations to the different portions of the pelvis,

in all the modifications of labour. His reasons are, first, the well-known fact that the head forms the great obstacle to easy delivery; second, it is important to determine the relative size of the head in its different presentations, as compared with the dimensions of the straits and cavity of the pelvis; and, third, the presentation and position of the head must be ascertained by the sutures and fontanels, which, when the denuded cranium is presented, become visible, and thus the relative positions of the fontanels and sutures, as regards the walls of the pelvis, can at once be perceived. Hence, a glance of the eye will reveal what circumference or plane of the head is in correspondence with any plane of the obstetric canal, and also how far the diameters and axes of the head correspond to the diameters and axes of the pelvis."

To insure positive accuracy in all his illustrations, Dr. Hodge has had prepared excellent photographs of the female pelvis and fœtal cranium, showing their relative size and position. Those photographs have been carefully transferred to stone, so that the lithographic illustrations by which the present work is accompanied furnish with great exactitude a condensed view of the mechanism of labour, and the position occupied by instruments, in the various presentations of the infant. With a view, also, to obtain a better idea than has hitherto been given of the form, size, and dimensions of the cavity of the pelvis, Dr. Hodge has had plaster-casts of it taken, which casts and various sections of them have been lithographed. These, it is believed, will give to the student of the female pelvis exact and useful information as to its interior, and serve to elucidate many important points in respect to the passage of the head through the pelvis, which had previously been involved in obscurity.

They who shall rise from a careful study of the mechanism of labour as described by Dr. Hodge in the work before us without clear and exact views in regard to it, will scarcely be able to master the subject after the most careful demonstration of it by the most accomplished teacher.

We should be pleased to be able to give to our readers an idea of the manner in which this subject has been handled by Dr. Hodge, and to compare his views in regard to some of the leading questions connected with it —with what may be denominated the physiology of gestation and parturition—with those held by our leading writers upon obstetrics, but this would scarcely be possible without exceeding greatly the ordinary limits of a review.

Dr. Hodge takes, as we believe, the most sensible view of the nature of the nausea and sickness so common during the early period of pregnancy, and sometimes attending it throughout its entire course, by referring it to disturbance of the digestive function from an irritation of the gastric nerves. If congestion or inflammation of the stomach exists in any case, it is always accidental or secondary, and not directly connected with the fact of gestation. This is proved by a series of facts adduced by the author: First, its being relieved by stimulants—by solid food, spices, brandy, etc. Second, narcotics often affording immediate relief, by acting, as they do, chiefly upon the nervous system. Third, its appearing and disappearing with marvellous rapidity, according to the ever varying condition of the cerebro-spinal system: the patient being often relieved by lying down, by a long walk or drive in the open air, by a change of thought or some strong mental excitement. Fourth, its disappearing immediately upon the occurrence of labour at any period of pregnancy, and upon the death of the fœtus in utero. Fifth, its being aggravated by any unpleasant impres-

sion upon the senses, mind, or feelings of the patient. Sixth, its being increased by antiphlogistic remedies, and by whatever tends to debilitate the woman. Seventh, the analogy of the symptoms to those arising from uterine irritation in non-pregnant females, which appear and disappear according as relief is afforded or withheld from the uterus. Eighth, the occurrence, generally, of a good appetite and digestion the moment the nausea and vomiting cease; there is no slow convalescence, as in recoveries from gastritis—no chronic or permanent injury remains. Ninth, the confirmation *post-mortem* examination affords to this view. In no case has it been shown that ulcerations or organic changes in the stomach were traceable to the sickness connected with pregnancy. Some rare cases, as those quoted by Chomel, Dubois, etc, may seem to be exceptions to this statement, in which, from a long continuance of gastric disturbance, the process of digestion had been so enfeebled, and the various secretions so acrid and irritating, as to excite, in conjunction with the undigested aliment, secondary gastritis and its consequences.

The author sums up his account of what may be termed the physiology of gestation as follows, during pregnancy:—

"1st. The uterus and its appendages are in a state of vital erection—its nervous and vascular systems are excited, and its organic actions increased for the development of the tissues of the parent, and for the sustentation and growth of the fœtus.

"2d. In consequence of this uterine excitation, the cerebro-spinal system of nerves is disturbed, sensibility is exalted, so that the mental, moral, and physical condition of the woman is easily excited or depressed—she becomes nervous.

"3d. The general vascular system, the organic life, is also excited. The capillaries become more active; nutrition, secretion, and excretion are augmented. This increased activity of the organic actions is often manifested at the beginning of gestation, gradually augmenting until the full period. When there is much nausea, loss of appetite, indigestion, there are few or no evidences of this activity in the capillary circulation, which is often depressed. When, however, these symptoms vanish, when the appetite and digestion return, the reaction is decided, and the nutritive functions become active.

"4th. There is a natural tendency to general vascular fulness or plethora in all cases of normal gestation resulting from the increased activity of the organic actions, and the greater demand made upon the animal economy for the sustentation, growth, and development of the new being in utero.

"5th. This tendency to hyperæmia is usually counteracted by the materials furnished to the fœtus by the free secretions and excretions, and, also, in many instances, by the increased development of the mother's tissues.

"6th. Not unfrequently actual plethora does exist, which is often relieved or moderated by an increase of the cutaneous, renal, and other secret ons, and also by effusion into the areolar tissue, and occasionally into the serous cavities. In more decided cases it gives rise to hemorrhages upon some of the mucous surfaces, or unfortunately into the cavities of the head, chest, or abdomen.

"7th. In a large majority of cases the watery elements of the blood are in excess, with some diminution of the red corpuscles. In such cases, although the woman is pallid, and often anasarcous, her health and strength are good, and her nutritive functions are well executed. The fœtus also is well developed, and may be born healthy and strong. This has been termed serous plethora, and, like other varieties of hyperæmia, is often productive of effusions within the cranium, chest, etc.

"8th. The presence of albumen in the urine is no positive indication of nephritis or toxicohæmia in the pregnant woman. It is merely the result of renal congestion or of general plethora.

"9th. In a large majority of cases of gestation there is not only plethora, but also an increase of the nutritive elements in the blood, as may be inferred from

the active growth and development of the fœtus in utero, and the excellent appetite, digestion, nutrition, health and strength of the mother.

"10th. Many women, from their original or acquired temperament and constitution, from loss of blood, acute or chronic diseases, are truly anæmic and chlorotic, and their blood is impoverished. In such cases there is a diminution of vital power. During pregnancy, therefore, they may require nutritious diet, tonics, and even stimulants, to increase their vital power and the nutritious character of their blood. But even in such cases, there will be, we think, a strong natural tendency to reaction, and also to what is properly termed plethora, that is, an increased quantity of the circulating mass; it is not in this case loaded with nutritious elements, but although deficient in these respects, the watery element is superabundant. Both these tendencies may be productive of mischief, especially by inducing dropsical effusions in the cavities of the body. Although a good diet and tonics may be demanded, yet alteratives, laxatives, diuretics, etc., are indispensable, not to eliminate a poison, but simply to relieve this hydræmia or serous plethora.

"The second condition of the circulatory system is *morbid excitement:* this is comparatively seldom inordinate, although there is a constant increase of organic action, and a constant tendency to plethora. This natural excitation and hyperæmia, however, may be productive of mischief, from various causes, arising from the temperaments and constitutions of individuals, from their degree of bodily vigour, and from the unfavourable circumstances in which they may be placed. The common causes of disease, such as exposure to cold, errors of diet, contagious virus, etc., may excite inflammatory or febrile diseases during digestion. Such diseases are often more severe, tedious, and difficult to manage, in consequence of the irritability of the vascular and nervous systems, and the disposition to hyperæmia. More active evacuations are demanded to promote 'resolution,' and to prevent the natural tendencies to congestion, effusion, and inflammation.

"In women who have been brought up delicately, who are 'nervous' or hysterical, especially where there is little disposition to secretion in the skin, kidneys, etc., a febrile state is often engendered by fecundation, without any apparent cause, except the mere fact of uterine excitement, as existing in gestation. Such excitements are generally manifested toward the middle of pregnancy, and are very generally constant, frequently not terminating until after delivery. They simulate the form of nervous or hectic fever, with morning remissions and evening exacerbations."

"There seems to be every grade of this morbid excitement, arising during pregnancy—from mere sensations of heat to forms so severe that patients will be confined to their beds, and excite fears for their ultimate safety. In such instances, however, few or no evidences of plethora are presented, and after delivery, there is a solution of the fever, without ultimate bad consequences. The patient's 'getting-up' is, however, tedious, and very seldom do the mammæ furnish any nutriment for the new-born child."

We have indulged in this perhaps unpardonably long quotation from the fifth chapter of the treatise before us, as well on account of the interesting nature of the subject to which it refers, namely, the condition of woman during pregnancy, as from its affording a fair ensample of the manner in which the author treats on matters introductory to the practice of midwifery Though but a summary, it is true, of the more developed expositions given by him, it conveys, nevertheless, a very fair idea of Dr. Hodge's views in respect to the physiological and pathological peculiarities of the vascular and nervous systems of the female during gestation. The general correctness of these views will, we think, be recognized by all who have had much experience in obstetrics, and have properly improved the opportunities they have thus enjoyed.

In respect to the proposition of the induction of abortion or premature labour for the arrest of those violent, continued, and exhausting cases of

nausea and vomiting occasionally met with in the pregnant woman, Dr. Hodge gives a very decided dissent, at least in the earlier months of gestation. The doubtful prognosis which must exist in every case as to the final result to the patient, without an operation; the danger of the operation to the mother; the sacrifice of the life of the fœtus, especially if the operation is performed in the early months of gestation, render it evident that premature labour can be very rarely justified. Dr. Hodge concedes, however, that after the sixth month of utero-gestation, when the child may be considered as viable, the operation may, perhaps, in some very grave cases, be justifiable; although it is impossible to specify the peculiar combination of symptoms which renders it advisable. He has never met with such a case, nor has he heard of any practitioner of good standing in this city who has been so unfortunate. It is also to be remembered that, in cases of supposed death from nausea and vomiting in pregnant women, a *post-mortem* examination has revealed accidental complications, as peritonitis, inflammation and ulceration of the stomach and bowels, etc. etc., showing that pregnancy was but an accelerating, and not the essential cause of a fatal issue. The existence of such lesions may explain, also, why the operation has been so frequently fatal.

In respect to the unsettled question as to the extreme duration of pregnancy, Dr. Hodge remarks that there are many cases upon record of pregnancy prolonged to the tenth month.

"Most practitioners have met with such cases. A lady of this city, the mother of many children, always insisted she carried them ten months. In one case her friends and physician were perfectly satisfied upon this point—her infant was not born until ten months after the departure of her husband from home. A lady under our own care terminated her menstrual period on the 21st of January, 1843. Early in February she had nausea and other indications of gestation. She was not, however, delivered until the 17th of December, 1843, that is, *eleven* calendar months, *minus* four days, equal to three hundred and thirty days after the disappearance of the menses, or forty-seven weeks and one day. It would seem positive, therefore, in this case, that pregnancy lasted at least three hundred and two days, dating from the 18th of February, at the time when the menses should have recurred; but as symptoms of pregnancy existed for some two weeks previously, it is possible, and even probable, that some twenty or twenty-five days might be added, which would extend the time to three hundred and twenty-two, or three hundred and twenty-seven days."

We are well satisfied, from the many apparently well-authenticated facts upon record, and some that have fallen under our own immediate notice, that Dr. Hodge is correct in concluding that human gestation may be prolonged beyond the period of ten lunar months; how long is however a question in respect to which we are altogether in the dark. We believe with him, that in cases of retarded pregnancy, the children will usually be found to be more vigorous and more fully developed.

The examination by Dr. Hodge of the powers or forces concerned in effecting labour is full of instruction. It is marked by the same common sense which distinguishes all his teachings in respect to the vital processes that comprise the entire physiological history of the womb and other genital organs, from the act of impregnation to the final expulsion of the fœtus and the return of these organs to their normal state. The author's only aim is evidently to arrive at truth, discarding all novelties—every attempt at explanation which does not flow directly from well established premises. The entire chapter "On Labour," indeed, claims a careful study on the part of all who desire to acquire exact and practical views in relation to the subject.

In the chapter devoted to the management of natural labour, and which, by the way, we would remark, is a model for the fulness, precision, clearness, and accuracy of the instructions it imparts—Dr. Hodge, in common with the best authorities in obstetric practice, directs that the ligation of the umbilical cord should not be practised until respiration and an active capillary circulation have become fully established in the new-born infant. The application of the ligature will then be attended with no bad consequences, even though the pulsation of the cord should still continue.

"Great mischief," Dr. H. remarks, "often results from the premature tying of the cord, for if the placental function be interrupted before respiration and the pulmonic circulation, which ought to occur at birth, be fully established, congestions of the lungs, heart, and brain, are immediately induced, resulting in partial or complete asphyxia, or even death. Even when the child survives for some time after birth, the phenomena of 'morbus cæruleus' will exist, and may be succeeded by serous or bloody effusions into the tissues or cavities of the body, and usually by death."

There is a difference of opinion existing among obstetricians as to the necessity or even the propriety of the 'binder' or abdominal bandage being employed after delivery. While some insist upon its early application, so soon as the child is born, and before the placenta is removed, there are others who believe it to be productive of very little, if any good, and when unskilfully put on, as is most commonly the case, positively injurious—that instead of affording regular support to the abdominal parietes, it is more likely to become a ligature around the loins, endangering prolapsus uteri and other mischievous effects.

With Dr. Hodge we should object to the application of the binder previously to the delivery of the placenta, as useless; any good effect it might exert in favouring contraction of the uterus will be much better accomplished by the hand of the accoucheur. It is very evident, however, that, after the removal of the placenta and coagula, "the binder," when properly applied, becomes all-important. Its advantages when employed at this period are thus summed up by Dr. Hodge:—

"First. It supports the abdominal viscera, the diaphragm, and even the organs of the chest. Hence, it takes away the feeling of emptiness and exhaustion, tending to syncope, which sometimes follows a sudden subsidence of the abdominal tumour. The experience of the surgeon as to the utility of the bandage in the operation of paracentesis abdominis is confirmatory of the above remark.

"Second. The binder facilitates and maintains the tonic contractions of the uterus, and thus prevents a tendency to inertia, hemorrhage, &c.

"Third. It is also beneficial in preventing, by its uniform pressure, any tendency to passive congestions of the abdominal bloodvessels, especially those of the uterus, and thus diminishes the probability of uterine hemorrhage, inflammation, &c.

"Fourth. The pressure from the binder facilitates the gradual contraction of the cutaneous, areolar, and muscular parietes of the abdomen, and if maintained moderately for a few weeks after gestation, it will do much to condense the superficial tissues, and to prevent a pendulous abdomen, which is a source of real inconvenience to many married women, and destroys the symmetry of figure generally so much valued by ladies."

Passing by the admirable chapter on the treatment of the mother and child after labour, we come to the subject of obstetric operations. The author's instructions are arranged according as the hand of the accoucheur is alone sufficient, or the aid of instruments is required.

A careful study of the introductory remarks of Dr. Hodge, under the

head of "Operations by the Hands," we would earnestly recommend to the study of every one about to enter upon, or who has but recently commenced, the practice of obstetrics. His rules for version are particularly excellent.

Speaking of cephalic version, or version by the vertex, Dr. Hodge remarks that, for thirty years he has thought that, under certain restrictions, this operation should be resorted to in deviations of the upper part of the fœtal ellipse. The chief objections which have been urged against it, are the difficulty of execution, and that, after mutation has been accomplished, no *extractive* effort can be made with the hand. Dr. Hodge has not found version by the vertex to be an operation attended with difficulty, in favourable cases; he considers it to be very generally as practicable as podalic version.

"It is true, however, that if the operation be long delayed, until the uterus is powerfully contracted, and especially until the presenting part has partially escaped from the os uteri, it would be difficult, painful, and often impracticable; but the same is true if version by the feet be attempted under similar circumstances."

In regard to the objection that, in version by the vertex, after the position of the head has been rectified, we can make no traction with the hand to facilitate the delivery of the child, Dr. H. remarks, that it is one of no importance, inasmuch as the operation is performed *simply for malpresentations.*

"We must come to the conclusion, therefore," he remarks, "that version by the vertex is always desirable, because there is a greater prospect of preserving the life of the child. It can be usually performed as easily as podalic version, and the sufferings and danger of the mother, instead of being aggravated, are lessened, as compared to the operation of turning by the feet. It is also a recommendation that if from any cause, it should be found impossible to bring down the vertex, the practitioner could, without any important loss of time, resort to podalic version.

"The restrictions to which this operation should be subjected are not dubious; it should be confined to mal-presentations of the upper extremity of the fœtal ellipse. This includes, therefore, all mal-presentations of the head, such as the forehead, face, &c.; also presentations of the anterior and posterior parts of the neck, and many cases of the shoulder, especially where the arm has been retained within the uterus; although Dr. Wright speaks of his success in returning a descended arm, and then effecting version by the vertex. It should seldom be thought of in presentations of the sides of the trunk, or any of the deviated presentations of the pelvic extremity."

In coming to treat of obstetric operations by the aid of instruments, Dr. Hodge very logically divides instrumental means of delivery into four divisions, viz.: *First,* where the instruments are to be applied to the child in such a manner as to injure neither it nor its mother. *Second,* where the instruments are applied to the child, upon the supposition that its death, if it has not actually occurred, is inevitable, with the view of so reducing its size as to enable delivery to be accomplished. *Third,* where the operation is performed upon the mother, and although very dangerous to both her and the child, it affords, when timely and properly executed, a hope that both will be preserved. *Fourth,* where premature labour is brought on, in cases in which it is previously known that a living child cannot be born at "term." Under the *first* division is included delivery by either the fillet, the blunt-hook, the vectis or lever, or by the forceps; under the *second,* the operation of embryotomy, embryulcia, or cephalotomy; and under the *third,* the operations of symphyseotomy, and gastro-hysterotomy; while under the *fourth,* we include the induction of premature labour.

The subject of instrumental interference, whether it be to aid the natural efforts, when these are deficient, so that the life of the child may be saved, and at the same time the period of the mother's sufferings and the danger of injury to her tissues and to her life diminished; or, when delivery is impossible without artificial aid, to accomplish it in such a manner as to prevent the mother from perishing, and, at the same time, when practicable, to save also the life of the child; the whole subject, in a word, is most ably treated by Dr. Hodge. The circumstances which demand and sanction instrumental aid; the mode in which it is to be administered under the particular circumstances and conditions of the several cases in which it may be called for, and the dangers by which each form of it is attended, are laid down at considerable length, and with a clearness and exactness demanded by the importance of the subject, and well adapted to guard the young practitioner, on the one hand, from a rash resort to instrumental aid in cases where the natural powers may be safely trusted to terminate the labour, or, on the other, from such a timidity and delay in respect to its use as to deprive it in a great measure, if not entirely, of its conservative efficacy in respect to either mother or child.

By most of our best modern authorities in obstetrics the forceps are used mainly, if not entirely, as tractors and levers. Dr. Hodge recommends their use also as compressors. In ordinary cases of instrumental labour this compression is very trifling, being carried merely to the extent demanded to fix the blades firmly upon the head of the child, so as to prevent, while acting with the instrument, any motion of the blades upon the scalp; but Dr. Hodge advocates the application of an amount of compression beyond this point, "regulated by the necessities of the case, and the judgment of the operator."

"If," he says, "the head be large or the straits contracted, more pressure becomes requisite; otherwise delivery would be impracticable. How far this compression may be carried with safety to the infant, is a question of great interest; but the solution of it cannot have much influence on our practice, inasmuch as we must be regulated not so much by the idea how much compression can be borne with impunity, but how much is absolutely demanded to accomplish the delivery, for, of course, no more pressure should be made than what is essential for delivery. It is to be remembered, also, that the injury to the child depends much upon the longer or shorter continuance of this compression, and doubtless, also, on the degree of ossification which may exist in the cranial bones. Moreover, every practitioner is familiar with the wonderful fact, that while the placental functions continue, the brain will bear for a long time great pressure with impunity.

"We know that owing to the moulding of the head by the passages of the pelvis, and the powerful contractions of the uterus, the head may be greatly diminished laterally, and increased in length by the yielding and overlapping of the bones, in many instances, without destroying life, and we know, also, that in many cases where such compression has existed, forceps have effected a delivery, and the child been preserved. In one case of contracted pelvis, where the sacro-pubic diameter measured but little if any more than three inches, the author delivered an infant alive, whose head, a few hours after delivery, measured three inches and ten lines, in transverse diameter. We think, therefore, that the limit to be prescribed to the use of the forceps as compressors must be restrained by the necessities of the case, rather than by the effect it may have upon the life of the infant; for though that practitioner must be regarded as careless and even criminal who makes more compression than is absolutely necessary, yet he is fully justified in making that degree of compression requisite to effect delivery provided there be any reasonable expectation of preserving the life of the child.

"Although, therefore, the child must, in many instances, be exposed to some

danger from the use of the forceps as compressors, yet they afford as fair prospect for its safety in bad cases, where otherwise it must have perished, and in most instances, they are all important to diminish the sufferings and danger of the parent, with little or no risk to the infant."

The illustrated descriptions of the various obstetrical instruments given by Dr. Hodge are particularly interesting, while his remarks upon the excellencies and defects of the different forms and constructions which have been suggested for each of them, will be found a valuable guide to the young practitioner when furnishing his armamentarium obstetricum.

Dr. Hodge is not in favour of the operation of symphyseotomy; inasmuch as by it but a very trifling addition to the cavity of the pelvis is obtained; while, after its performance, the delivery must always be artificial. The stretching or even laceration of the pelvic tissues in the neighbourhood of the symphysis pubis, caused by the division of the latter, endangers the occurrence of more or less extensive inflammation, followed by suppuration and the formation of abscesses, and of fistulæ of long continuance; and as reunion of the symphysis is a rare occurrence, impairing the patient's power of locomotion, without reference being made to the injuries which may be sustained by the bladder and urethra, it is, therefore, very evident that symphyseotomy, while it promises very little for the child, and endangers the comfort, if not the life of the mother, must be discarded from among the legitimate operations of obstetric practice.

In respect to the all-important question of the propriety of "the Cæsarean section," based, of course, upon the danger incurred by the mother and child in its performance, Dr. Hodge, after regretting the insufficiency of the statistics in our possession by which to estimate with any approach to accuracy the degree of this danger, and whether it be modified to any great degree by the period of labour at which the operation is performed, remarks as follows:—

"Theoretically much might be said in favour of the operation. Notwithstanding the dangers necessarily incident to gastrotomy, we know that it has been frequently performed with success, not merely in cases of hernia, but more especially for the removal of ovarian or other tumours from the cavity of the abdomen. Patients, also, have often recovered from punctured, incised or even gunshot wounds, interesting the cavity of the peritoneum, and, in many instances, have survived universal peritonitis, whether arising spontaneously, or resulting from accidents. And, finally, the undoubted recoveries of many patients, after the Cæsarean section, all combine to prove that the operation is justifiable in cases otherwise desperate.

"The hope, also, may be entertained, that if the patient be in a good condition, mentally and physically, and if the deformity of the pelvis be ascertained previous to the occurrence of labour, so that suitable preparations can be made for the operation, gastro-hysterotomy will prove far more successful than in times past, and, perhaps, may be justified even in cases of moderate deformity, when the child is active, for the purpose of preserving its life, as well as that of its mother. Let it be remembered, however, that in the present state of our knowledge, the practical rule, as laid down by English obstetricians and confirmed by the high opinion of Cazeaux, justifies the operation only when the conjugate diameter is below two and a quarter inches, whether the child be alive or dead."

Turning to the discussion by our author of the question as to the propriety of the induction of premature labour in cases in which it is known that a live child cannot be born at the full term by the natural powers, and as to the degree of safety it affords to both mother and child compared with the other means of delivery that have been suggested under the same circumstances, we find that he is an advocate for procuring the expulsion of the

infant at as late a period of gestation as will insure its viability, if it be still alive, and yet sufficiently early to prevent its head having acquired a size that will prevent its passage through the pelvis of the mother. The objections to the operation have gradually been abandoned, and, although the operation is still less favoured by the Continental than by the English authorities, it receives the countenance of the best practitioners; and "statistics in all parts of the world are confirming the propriety of the practice in suitable cases."

"At the present day," Dr. Hodge remarks, "it seems wonderful that any question as to its morality should have been discussed. The question is not whether the practitioner was to determine the life or death of the child in utero, where the mother's pelvis is deformed, but what were the best means of delivering her and the child from existing danger; in other words, whether the parent and her infant would be safer by the induction of premature labour, or by resorting to gastro-hysterotomy, symphyseotomy, or embryotomy. This reduces the question to one of ordinary medical or surgical consultation, where the welfare of the patient is involved in the decision of the practitioner. It is a choice of evils, and the obstetrician is in duty bound to choose the least for his patient. This is not a question, therefore, of morality, any more than any other question presented for professional decision. It is one for the exercise of a sound discretion under a full knowledge of all the circumstances involved, and of the existing danger to the parent and her child; and, certainly, the decision in favour of the induction of premature labour in cases to which it is suited must be readily and cheerfully rendered. We have no doubt that the British obstetrician has by it conferred a substantial benefit on man, and that thousands of lives of infants and their mothers will, by its means, be preserved."

The foregoing remarks apply strictly to those cases in which the induction of premature labour may be demanded from the impediment offered to the delivery at term of a live child; there are, however, other cases, such as when there is a tendency to a large size and perfect ossification of head in the infant; when there is a diseased or disorganized placenta; where there is a dead child in utero; where there exists irreducible retroversion of the uterus, or uterine hemorrhage, or placenta prævia; where the mother's health is so impaired as to jeopardize her life should labour be deferred to the full term; when there is intense, persistent, and exhausting nausea and vomiting, and where puerperal convulsions have occurred in former labours, or are threatened, in all of which cases a resort to the induction of premature labour has been proposed in order to insure the safety of the mother. The propriety of the proposition is considered by Dr. Hodge at some length—the reasons for and against it are carefully weighed, and a conclusion adverse to its adoption in the greater number of the cases referred to, arrived at. The entire teachings of the author on the subject of the induction of premature labour are particularly sound and instructive. His remarks on the abuse of the operation also are replete with sound sense, while his general conclusion that, in the present state of our knowledge, to procure abortion is perfectly justifiable in cases of great deformity, to secure the important life of the parent, is a position fully borne out by the leading authorities of Great Britain and the continent of Europe.

The ensuing ten chapters treat of the several forms of dystochia, whether the complication of the labour is referable to the fœtus or to the mother. The whole of these chapters exhibit the same clearness and accuracy of description, and the same definiteness and soundness of instruction as distinguish every other portion of the work, while the whole subject is most

copiously illustrated by admirable lithographic plates from original photographs.

In the chapter (21st) on dystochia from rigidity and irregular contractions of the female organs, will be found the views and experience of Dr. Hodge, in respect to the propriety of the induction of anæsthesia by ether or chloroform during labour, and the conditions under which it may become proper. A very neat summary of the present state of our knowledge upon the subject is presented, drawn up with the utmost candour and characterized by the same common sense reasoning, from the facts which have been accumulated in reference to it by the best authorities, which characterizes all Dr. Hodge's expositions of the several unsettled or controverted questions in the practice of midwifery. His general conclusion as to the question of anæsthesia in labour is thus expressed:—

"After a candid examination of various facts and arguments presented by scientific and experienced accoucheurs," the author believes, "that anæsthesia, as a general rule, should not be employed *in normal labours*, but be reserved for complications more or less serious, including many depending upon the mental and normal as well as the physical condition of the parturient woman."

The highly important subject of puerperal convulsions is very fully discussed in Chapter 22d. Dr. Hodge believes that although closely allied to other convulsive affections to which women are liable at different periods of their existence, puerperal convulsions are of an essentially different type, peculiar in their symptoms and history, and demand important modifications in treatment. The great and leading predisposing cause of puerperal convulsions is, according to Dr. Hodge, the increased excitability of the nervous system generated by pregnancy; plethora, or the excited condition of the bloodvessels so common during gestation, is also set down as another very important exciting cause of these convulsions. Local congestion is very liable to ensue in the state of plethora incident to gestation, which still further aggravates the nervous irritation, interferes with the functions of the organ in which it is seated, and may be followed by watery or bloody effusion. Should, therefore, the brain be the seat of irritation from a moral cause followed by congestion, and especially by sanguineous effusions, the cerebral functions will be deranged, as manifested by pain, delirium, convulsions, coma, and it may be by death.

Dr. Hodge denies that puerperal convulsions are connected with granular nephritis, and a consequent vitiated state of the blood. He contends that the albuminuria, which so often coexists with puerperal convulsions, is indicative of congestion of the renal vessels, or of general plethora, and has no necessary connection with toxicohæmia in any of its supposed forms.

The exciting causes of puerperal convulsions are very numerous; among them may be enumerated powerful mental or moral impressions, changes of temperature, especially from heat to cold, irritations of the stomach and bowels, from undigested food, acrid ingesta, bile, accumulation of feculent matter or gas, bile, etc., severe attacks of gastrodynia, colic, neuralgia, severe falls, blows, etc.

"During labour, convulsions are often produced or aggravated by the severity of the pains arising from the contractions of the uterus, or from obstetric operations. They may also be caused by the pressure of the child upon the os uteri, but more frequently from pressure of the child upon the obturator and sacro-sciatic nerves, and upon the sensitive tissues of the perineum and vagina. The bearing-down efforts must be also regarded as a common and efficient exciting or aggravating cause."

By almost every writer on puerperal convulsions the presence of the child in utero has been arranged among the most important of their exciting causes; by a few this would seem to be considered as their chief if not their cause. This Dr. Hodge very properly sets down as an error, which has been productive of much mischief. He considers it, however, as most certainly a predisposing cause.

"Hence," he remarks, "so long as it lives in the womb, the predisposition to convulsions may be augmented, but on its death or delivery the symptoms of nervous and vascular excitement diminish and disappear. There is no evidence that the fœtus *per se* excites spasms or convulsions. So long, therefore, as uterine pain and the bearing-down efforts are absent, no excitation is caused by the continued presence of the child in utero."

The indications of cure in cases of puerperal convulsions are, according to our author, *first*, to diminish or remove the plethora or congestions; and *second*, to quiet the cerebro-spinal irritation.

To fulfil the first he depends upon prompt and copious venesection, followed by cups or leeches to the head; stimulating enemata, to empty the intestines, promote the secretions, and act as revulsives; with the same intent purgatives are to be administered whenever there is an opportunity. To quiet the cerebro-spinal irritation, Dr. Hodge directs the removal of the cause of nervous irritation, whether it be congestion, gastric or intestinal irritation, distended bladder, or uterine irritation, including labour, and all its attendant circumstances. In respect to the question, If convulsions occur during gestation, should premature labour be induced? Dr. Hodge presents a decided negative. To attempt it would in his estimation be a means of augmenting instead of relieving the convulsive paroxysms. During the first stage of labour, also, an attempt to deliver is prohibited.

"All the usual treatment," says Dr. Hodge, "should be diligently employed, but no artificial delivery should be attempted. Relaxation and dilatation of the os uteri should be facilitated by means of the lancet, by warm mucilaginous injections into the vagina, and occasionally by belladonna ointment, and in a few instances, by the employment of opiates and anæsthetics."

During the second stage of labour, however, artificial delivery becomes, according to our author, with few exceptions, the duty of the practitioner.

"The mode of accomplishing delivery must be accommodated to the circumstances of the case. In all *vertex* presentations the forceps should be employed not merely when the head is at the inferior strait, or in the cavity of the pelvis, but when it is at the superior strait. The os being dilated and the membranes ruptured it is difficult to conceive any serious objection to the forceps when the vertex presents, even when it is at the brim of the pelvis. Little or no pain is excited by their application, and the subsequent sufferings are simply those necessarily attendant on the descent and pressure of the child. If there be any malpresentation of the head, it should be corrected according to prescribed rules, and then the forceps may be applied."

Version, which has been recommended when the head is high up, as a substitute for the forceps, Dr. Hodge considers as far more painful and dangerous for both mother and infant; he would restrict it, therefore, to a few rare cases of trunk presentations.

In respect to *craniotomy*, which has been recommended by some authorities, Dr. Hodge remarks that, in ordinary cases, nothing is to be gained by it; the forceps are fully adequate for the mother's welfare, and may prove equally advantageous for that of the infant. Craniotomy, therefore, is to be restricted to cases of deformity of pelvis or child, and perhaps to a few instances where the child is dead.

"In pelvic presentations," Dr. Hodge remarks, "delivery should be facilitated by the blunt hook or fillet, and afterwards by the hands or forceps, according to the various circumstances attending such presentations."

Opium, which was among the remedial agents considered at one time the best adapted to cases of puerperal convulsions, after having for a time been discarded because believed to be calculated to do more harm than good, is becoming to be again very generally employed as an important adjuvant to direct depletion. Dr. Hodge remarks that

"When the bleeding has been carried as far as may be prudent, and there is still a tendency to convulsions, or to mental or nervous excitements, a full dose of opium has proved very advantageous in quieting the symptoms of nervous irritation, and preventing the reflex influences of uterine contractions, &c., upon the spinal marrow and brain. In hysteric or milder forms of convulsions, little depletion may be necessary before its exhibition, but where there is much stertorous respiration and great coma, the employment of opium should be long postponed." "In doubtful cases, preparations of camphor, hyoscyamus, and lactucarium may be occasionally substituted. It is often preferable to administer these anodynes per rectum, that they may more decidedly influence the uterine and pelvic irritations. Belladonna ointment applied to the os uteri is strongly recommended, to diminish its sensitiveness, and promote dilatation."

Anæsthesia is recommended by Dr. Hodge under the same circumstances in which opium may be safely administered. He thinks, however, that it should be restricted to purely hysterical cases, or to those in which much nervous excitement, general or local, remains after congestion of important viscera has been relieved: it is prohibited where there are organic affections of the brain, heart, or lungs.

"Under ordinary circumstances, after depletion, anæsthetics," says Dr. Hodge, "quiet mental or moral excitement, moderate or relieve the convulsions, and often prevent a return of the paroxysms. Anæsthesia also favours the relaxation of the os uteri and vagina, thus facilitating the progress of labour, and will enable the patient to endure operations which might otherwise prove fatal. When, however, there is congestion or great coma, its administration is contraindicated."

Dr. Hodge concludes his very complete and admirable account of the treatment of puerperal convulsions with the following remarks, the correctness of which is fully borne out by ample statistics:—

"Such is a summary of the treatment which experience has, at the present time, proved most efficient in puerperal convulsions. Its success has been comparatively very great, the mortality being diminished nearly fifty per cent.; and when the principles which should regulate the practitioner are better understood and judiciously carried out, more favourable results may be anticipated for mother and child."

There follow some remarks on the convalescence from this formidable affection, and some pertinent suggestions in regard to its prevention.

The entire section of Chapter 22d, devoted to the subject of puerperal convulsions, deserves to be carefully studied by every obstetrician. The history of the disease, its causes, pathology, management, and prophylaxis are treated by Dr. Hodge in a most masterly manner, and the conclusions at which he arrives in reference to each seem to us to be in accordance with the results of all recent experience, when carefully analyzed and tested by reliable statistics.

The next complication of labour treated of by our author is rupture of the uterus. In the treatment of this terrible and often fatal accident the general principle should always be acted upon, "that the prompt removal

of the child contributes to the safety of the parent." We are happy to find that Dr. Hodge is an advocate for gastrotomy in all cases in which the child cannot be readily delivered by instruments or the hand. In the latter periods of gestation he considers, indeed, that delivery by the natural passages should never be attempted, but the child and its appendages should be extracted by the Cæsarean section. The relative advantages of gastrotomy, compared with other modes of delivery, are shown by the statistics furnished by Dr. Trask; from which it appears that of two hundred and seven cases in which gastrotomy was performed twenty-two recovered, and seven, or 24 per cent. were lost, while in those in which version, the forceps, perforation, etc., were employed, thirty-eight recovered, and eighty, or 68 per cent. were lost.

In the chapter on abortion and premature labour, Dr. Hodge, referring to the well-known fact that many women are liable, in successive pregnancies, to abort at the second or third month, the occurrence of which periodic abortions has been referred to "a morbid habit," remarks that, after a careful attention to these cases, he is persuaded that habit has very little to do with their production. He believes that in a large majority of cases they are dependent upon retroversion of the uterus, and that the tendency to abortion may be prevented by correcting the displacement before, or even after fecundation has taken place. He cannot agree with M. Velpeau in referring the greater number of these early abortions to a diseased condition of the ovum. It seems to him very improbable that a woman should habitually abort from a diseased ovum when the health of herself and husband is good, more especially as his clinical experience has taught him that "the habit" may be destroyed, very generally, by suitable treatment. In cases where the ovum had perished a miscarriage could not be prevented.

In cases of accidental hemorrhage during pregnancy, to arrest the flow of blood and the consequent exhaustion of the patient, Dr. Hodge is in favour of the use of the "tampon" or "plug," and for the following reasons:—

"1st. Because occult hemorrhage is a very rare accident, under any circumstances, and especially after the use of the tampon made of small pieces of sponge, where the fluids are allowed to escape, and yet coagulation of the blood is facilitated.

"2d. Because no occult hemorrhage can occur unless the uterus yields, as the ovum, when entire, is incompressible. The yield of the tissues of the uterus seldom occurs, as the pressure from the effused blood very universally stimulates the uterine fibres to contract, forcing the blood to the orifice of the uterus.

"3d. The tampon is very effectual in arresting hemorrhage, unless it be profuse, and in such cases it moderates the discharge, so that time is gained until the os uteri is dilatable.

"4th. Should it succeed, the life of the child, as well as that of the parent, is usually secured.

"5th. On the contrary, if the membranes be punctured, the child, even if the hemorrhage be arrested, is in the greatest danger from its immaturity and the compression to which it and the placenta are subjected before delivery can be accomplished.

"6th. If, after the rupture, the hemorrhage should continue, the danger to the mother, as well as to the child, is most imminent, as, under the circumstances, the ordinary remedies for arresting hemorrhage are very inefficient, and almost the only chance left for the unfortunate mother is 'forced delivery,' which all acknowledge to be fraught with the greatest peril, especially as the patient is already weakened from loss of blood."

Dr. Hodge's treatment of placenta prævia is, perfect rest of the patient in bed, hips elevated, head low; a simple, easily digested, and unstimulat-

ing diet; cold applications to the uterine region, and warm to the extremities; avoidance of all mental and moral excitement.

"The nature of the hemorrhage being ascertained, a soft sponge, dipped in cold water and vinegar, should be applied directly over the orifice of the uterus, and supported by other portions introduced between it and the floor of the pelvis, or, perhaps, by a gum-elastic bag distended with water. If the hemorrhage should continue and the os remain rigid, the employment of the sponge tent or the internal caoutchouc dilator may possibly be advantageous before more decided ulterior treatment is employed. If, however, the hemorrhage be, by these means, diminished, and the patient's strength is good, the practitioner should wait until the os uteri be dilatable. Then, if the membranes do not rupture, they should be perforated, and the liquor amnii evacuated. If the contractions of the uterus be not powerful, the ergot should be given in repeated doses, while cold applications should be made to the uterus and rectum. If now the bearing-down efforts be efficient, and the perineum becomes distended, the tampon may be gradually removed, and, if necessary, the forceps applied to complete delivery. If the head be too large, or the pelvis small, perforation of the cranium may, in some rare instances, be demanded.

"If, unfortunately, these measures do not sufficiently diminish the hemorrhage, and the patient's strength fails, and the labour cannot be rapidly completed, a still further hope remains by at once extracting the whole placenta, either by means of the hand, or some suitable instrument, so that, if possible, the hemorrhage may be arrested and time gained for the patient's system to react, that delivery may be subsequently effected.

"If it should be ascertained that the presentation is preternatural, the membranes ought not to be ruptured until the os uteri is dilatable, so that version may be accomplished with less difficulty. In such cases also, unless the necessity be imperative, the artificial abstraction of the placenta should be avoided, as the subsequent operation of version would be more painful and dangerous."

To form a correct estimate of the mode of managing placenta prævia, a summary of which we have just given, it will be necessary to examine carefully its rationale as laid down by our author, together with the reasons adduced by him in proof of its superiority over the several exclusive plans of treatment which have been proposed by leading obstetricians. The space occupied by the discussion is such, however, as to prevent us from attempting to present even a bare outline of it to our readers. To such of them as are interested in obstetrical practice we recommend a careful study of the entire account given by Dr. Hodge, in the 24th chapter of his treatise, of the cause, phenomena, progress, and management of unavoidable hemorrhage.

We must pass over the chapter on inertia and inversion of the uterus without any other special notice than to indicate the remarks of Dr. Hodge in respect to the employment of ergot as an oxytocic. He condemns the use of the article unless there is satisfactory evidence of the absence of all mechanical impediment to the passage of the child, in the first stage of labour, in primiparous women, in cases of mal-presentation or position, of rigidity of the os uteri, vagina, or perineum, or of disproportion between the head of the child and the passages of the pelvis. On the contrary, he remarks:—

"If the os uteri be perfectly dilated, the membranes ruptured, the presentation favourable, and if relaxation of the perineum has occurred, there can be no reasonable objection, in most cases, to the administration of this specific. In this city, after the publication of Dr. Stearn's letter 'calling attention to the oxytocic properties of the article,' it was very generally employed by the profession, under the sanction and example of both Drs. James and Dewees, for many years. From its mischievous influences, however, its reputation has gradually declined, and it is now comparatively seldom exhibited during the second stage of labour. Dr. Meigs says he never gives it for its expulsive power; and

we must coincide with him in the declaration that the forceps are preferable for this purpose."

Chapter 26 treats of labour complicated with various local and general diseases of the mother, while the 27th and closing chapter is devoted to a consideration of extra-uterine pregnancy. Both chapters exhibit the same careful but explicit teachings which are characteristic of the treatise throughout. The author's remarks upon the several plans proposed for the treatment of cases of extra-uterine pregnancy are particularly interesting; and although, from the very nature of the accident, and the obscurity of the diagnosis, in the early stages invariably, and in very many instances throughout the entire case, nothing positive in regard to treatment can be laid down, yet to be able to determine what should not be done, is, it must be admitted, in such cases all important, inasmuch as the safety of the patient and the reputation of the practitioner may depend on it.

We have endeavoured, in the foregoing notice of the work of Dr. Hodge, to exhibit to our readers its general excellence, and the ability with which the author has treated some of the leading questions in midwifery. We do not pretend to have pointed out all that is sound in the matter and commendable in the manner of his teachings, but only so much as to recommend the work to the favourable notice of the profession. It constitutes, very certainly, one of the fullest and most complete treatises on the principles and practice of obstetrics that has yet appeared in either Europe or America; and we may safely add, the most reliable. On whatever question in midwifery the practitioner may consult it, he will find always the needed information, and may repose the fullest confidence in following it that he will not be led into grievous error. D. F. C.

ART. XIII.—*Outlines of the Chief Camp Diseases of the United States Armies as observed during the present War. A Practical Contribution to Military Medicine.* By JOSEPH JANVIER WOODWARD, M. D., Assistant Surgeon U. S. A.; Member of Acad. of Nat. Sciences of Phila.; of the Pathological Society of Phila., &c. &c. Philada.: J. B. Lippincott & Co., 1863. 8vo. pp. 364.

WHILE engaged in collecting materials for an authorized and elaborate medical history of the war, Dr. Woodward has embodied in this volume an important instalment of its results and lessons. Although his own observations on the field, with the Army of the Potomac, in the military hospitals at Washington, and in the Army Medical Museum, have afforded the principal basis for his conclusions, yet the uncommon opportunities belonging to his connection with the Surgeon-General's office must give a higher authority to his book than would otherwise attach to it. Avowing, in his preface, the present incompleteness of his investigations, he trusts that they may prove useful, even if fragmentary, to his brother medical officers. There is no doubt that he is fully justified in this anticipation. Even if the diseases of the army during this war had been merely a repetition of those known already in the armies of Europe, their closer study would be of great importance. But, while there are many elements